

IN THE CLAIMS:

Please amend the claims as shown below, in which insertions are indicated by underline, and deletions are indicated by strikethrough or double brackets. Please add new claims 3 and 4. This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (currently amended). A motion control apparatus for a vehicle, comprising:

a road data storing ~~means~~ device for storing road data;

~~own~~ a vehicle position ~~detecting means~~ detector for detecting ~~an own~~ a position of the vehicle ~~position~~ based on the road data;

a vehicle speed ~~detecting means~~ detector for detecting ~~an own~~ a speed of the vehicle speed;

a corner radius ~~arithmetically operating means~~ calculating device for ~~obtaining~~ calculating a radius of a corner existing on a route on which ~~an own~~ the vehicle is traveling at present, based on the road data and the ~~own~~ vehicle position;

motion parameter ~~detecting means~~ detectors for detecting motion parameters expressing a turning motion state of the ~~own~~ vehicle;

an actual turning radius ~~arithmetically operating means~~ calculating device for arithmetically operating and estimating an actual turning radius when the ~~own~~ vehicle enters the corner, based on at least the ~~own~~ vehicle speed and the motion parameters;

a radius difference calculating ~~means~~ device for calculating a difference between the radius ~~arithmetically operated~~ calculated by the corner radius ~~arithmetically operating means~~ calculating device and the actual turning radius; and

a motion state control means device for controlling a motion state of the ~~own~~ vehicle based on a calculation by the radius difference calculating ~~means device~~ so that the actual turning radius becomes close to the radius of the corner.

Claim 2 (currently amended). A motion control apparatus for a vehicle, comprising:

- a road data storing means device for storing road data;
- ~~own~~ a vehicle position detecting means detector for detecting ~~an own~~ a position of the vehicle ~~position~~ based on the road data;
- a vehicle speed detecting means detector for detecting ~~an own~~ a speed of the vehicle speed;
- a corner radius arithmetically operating means calculating device for ~~obtaining~~ calculating a radius of a corner existing on a route on which ~~an own~~ the vehicle is traveling at present, based on the road data and the ~~own~~ vehicle position;
- motion parameter detecting means detectors for detecting motion parameters expressing a turning motion state of the ~~own~~ vehicle;
- an actual turning radius arithmetically operating means calculating device for arithmetically operating and estimating an actual turning radius when the ~~own~~ vehicle enters the corner, based on at least the ~~own~~ vehicle speed and the motion parameters;
- a radius difference calculating means device for calculating a difference between the radius ~~arithmetically operated~~ calculated by the corner radius ~~arithmetically operating means~~ calculating device and the actual turning radius;
- a motion state determining means device for determining a motion state of the ~~own~~

vehicle at the corner with respect to at least discrimination of an understeer state and an oversteer state, based on a calculation by the radius difference calculating ~~means~~ device; and

a motion state control ~~means~~ device for controlling the motion state of the ~~own~~ vehicle to cancel the understeer state or the oversteer state, which is determined by the motion state determining ~~means~~ device.

Claim 3 (new). A motion control apparatus for a vehicle, comprising:

a road data storing device which stores road data;

a vehicle position detector which detects a position of the vehicle based on the road data;

a vehicle speed detector which detects a speed of the vehicle;

a corner radius calculating device which calculates a radius of a corner existing on a route on which the vehicle is traveling at present, based on the road data and the vehicle position;

motion parameter detectors which detect motion parameters expressing a turning motion state of the vehicle;

an actual turning radius calculating device which calculates an actual turning radius when the vehicle enters the corner, based on at least the vehicle speed and the motion parameters;

a radius difference calculating device which calculates a difference between the radius calculated by the corner radius calculating device and the actual turning radius; and

a motion state control device for controlling a motion state of the vehicle based on a calculation by the radius difference calculating device, the motion state control device controlling the vehicle such that the actual turning radius becomes close to the radius of the corner.

Claim 4 (new). The motion control apparatus of claim 1 wherein

the vehicle comprises a plurality of wheels, each wheel comprising a wheel brake, and

the motion state control device further comprises a brake force adjusting device adapted

to individually control each of said wheel brakes, and

the motion state control device controls the vehicle through the brake force adjusting

device such that the brakes are controlled individually and the forces applied to each are unique

so that a vehicle direction correction is effected such that the actual turning radius becomes close

to the radius of the corner.